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17.7

Explosives Training and Qualification Program

Recommended for approval by the ES&H Working Group

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New document or new requirements

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- ☒ New document
☐ Major requirement change

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* New document

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Explosives Training and Qualification Program

1.0 Introduction

The purpose of the Explosives Training and Qualification Program is to provide LLNL with personnel who are trained and qualified to work safely with or around explosives. The key element in such training, in addition to ensuring that each worker has the necessary technical knowledge and skills, is ensuring that an individual has the proper attitude toward explosives safety, including recognition of:

- The inherent hazards involved in explosives work.
- The importance of adhering to the rules that govern the handling of explosives.

The purpose of this document is to provide requirements for training the three LLNL-designated categories of personnel who work with or around explosives:

1. Explosives-aware personnel (previously termed "explosives knowledgeable").
2. Explosives support personnel.
3. Explosives handlers.

Compliance with the requirements provided in this document ensures that all such personnel have a common core of knowledge and necessary specific training that is sufficient to qualify them for work with or around explosives. In addition to the common core of knowledge, explosives support personnel and explosives handlers also need specific training for their job assignments.

This document also provides a method of determining whether a person is trained and qualified for the tasks related to explosives handling to which he or she is assigned.

1.1 Applicability

The Explosives Training and Qualification Program applies to all LLNL personnel who handle explosives or work alone in proximity to explosives, and to their payroll or designated qualifying supervisors. Personnel currently qualified as "explosives knowledgeable" are to be redesignated as "explosives aware" without further training. Their training records shall be updated at the next review to reflect this new designation. Personnel who are to receive the new designation of "explosives support personnel" shall have a supervisory records review and, if qualified, have their training records updated to indicate that they have fulfilled the requirements for this category.

Personnel currently qualified as "explosives handlers" are to remain explosives handlers without further training other than the annual requalification already required. Personnel qualification is discussed in Section 4.0.

1.2 Description of the Training Program

Because the depth of training varies with the complexity of the job assignment, a training plan should be tailored for each candidate. Prior safety training and work with explosives should also be considered when developing a training plan. Different people in the same work group may have different training plans if their work assignments are different.

1.3 Categories of Personnel

This section describes the three LLNL-designated categories of personnel who work with or around explosives: explosives-aware personnel, explosives support personnel, and explosives handlers.

1.3.1 Explosives-Aware Personnel

Explosives-aware personnel:

- Are authorized to enter rooms containing explosives without the presence of an explosives handler. However, the only actions that explosives-aware personnel are authorized to perform in such rooms is turning lights on or off and visually inspecting the room, without touching anything else in the room.
- Cannot handle explosives.
- Are not required to be enrolled in the medical surveillance program for explosives handlers.
- May, within the limits of the relevant Facility Safety Plan (FSP), escort additional persons into an explosives work area only for hands-off observations or inspections. Personnel limits for the area shall be observed and always kept to a minimum. Escorted persons shall **never** be left alone in the presence of explosives.

1.3.2 Explosives Support Personnel

Employees designated as explosives support personnel:

- Are authorized to perform specific tasks that involve an explosives hazard but do not involve explosives handling.

- Cannot handle explosives.
- Are authorized to touch cased or packaged explosives but not to move bare, cased, or packaged explosives or assemblies.
- Are not required to be enrolled in the medical surveillance program for explosives handlers.
- Are authorized to make data line connections to explosives or assemblies if trained to do so.
- May, within the limits of the relevant FSP, escort additional persons into an explosives work area for hands-off observations or inspections only.

Prior permission of the Responsible Individual (RI) is required before the escorted person may perform any other activities in the room. Personnel limits for the area shall be observed and always kept to a minimum. Escorted persons shall **never** be left alone in the presence of explosives.

Personnel may be designated as explosives support personnel for one of the following two reasons:

1. Non-explosives work needs to be performed in an explosives area without the presence of a qualified explosives handler, and removing the experimental apparatus or explosives from the area is not practicable.
2. A person who is not qualified as an explosives handler needs to perform work near explosives or on equipment that is directly or indirectly connected to explosives.

In addition to completing the training and qualification requirements, explosives support personnel may have additional restrictions (e.g., a limitation on the scope of work or a requirement to work under the supervision of a qualified explosives handler), depending the type of work performed. Such restrictions are specified in the FSP or Operational Safety Plan (OSP) for the facility where the explosives support personnel designation is used.

1.3.3 Explosives Handlers

Explosives handlers:

- Are authorized to perform hands-on work with explosives.
- May, within the limits of the relevant FSP, escort additional persons into an explosives work area. The handler assumes responsibility for allowing any activities that the escorted person performs within the room.

Personnel limits for the area shall be observed and always kept to a minimum. Escorted persons shall **never** be left alone in the presence of explosives.

2.0 Training Elements

2.1 Training Plans

The required classroom training and on-the-job training (OJT) for each explosives-aware person, explosives support person, or explosives handler is specified in a training plan developed for that individual. A specific training plan shall be designed by the payroll or designated qualifying supervisor and tailored to the experience of the candidate and the specific job. The complexity of the proposed explosives work is an important determinant of the training plan, which consists of required formal classes, required general (i.e., site-specific) OJT, and task-specific OJT.

To ensure that the training plan is adequate, the payroll or designated qualifying supervisor shall review the training plan with knowledgeable people at his or her discretion, and shall obtain concurrence of the cognizant Hazards Control explosives safety engineer before training begins. Additional management approval may also be required, as specified by each payroll organization.

Once an employee's training plan has been concurred with (and any additional management approval has been obtained), the employee is designated as a trainee under the direction of one or more trainers. At this point, the trainee is permitted to handle explosives only when a qualified handler is present and directing the job.

2.2 Formal Classes

The Hazards Control Department periodically presents classes to support payroll or designated qualifying supervisors in their training responsibility. The classes are taken in addition to, and not as a substitute for, a well-planned and well-executed OJT program. "Explosives Safety Orientation" (HS2016, soon to be replaced by HS2020) is a required element of each training plan. Attendance in classes supplements OJT. Not all classes are required for all explosive handlers. The classes are listed below:

- "Explosives Safety Orientation" (HS2016—soon to be HS2020). Required for all personnel who work with or around explosives.
- "Explosives Safety Orientation, S300" (HS2080). Required for Site 300 personnel who are not explosives handlers.

- "Explosives Transportation Safety" (HS2120). Required for drivers of vehicles used to transport explosives.
- "Explosives Safety for Supervisors" (HS2240, also listed as XA1789). Recommended but not required for payroll or designated qualifying supervisors of all personnel who work with or around explosives.

The Hazards Control Department also develops additional classes as needed to fill special requirements, e.g., HS2045, "Primary Explosives Safety Training," for handling primary explosives. The EPD has additional classes for personnel working at LLNL's permitted explosives waste storage and treatment facilities.

Some buildings or areas, such as the High Explosives Application Facility (B191) and Site 300, also have required training for unescorted access to areas where explosives are used. Such classes shall be a part of the training plan for a trainee who is to work in those buildings or areas.

A videotaped class, "Properties of Explosives," consisting of 18 videotapes of 50 minutes each, is also available. This class contains a large amount of history and background information on various facets of explosives and is available from the Explosives Safety Committee Chair or Hazards Control Explosives Safety as a supplement to other training. For more details in this area, contact the Hazards Control explosives safety engineers.

2.3 On-the-Job Training

OJT is the key to explosive safety training because it is a highly effective method of imparting skills and knowledge. An explosives handler designated by the responsible payroll or designated qualifying supervisor shall conduct all OJT. The payroll or designated qualifying supervisor shall identify qualified OJT trainers for each OJT element in the training plan. The trainer shall realize the importance and responsibility of his or her assigned task. A core set of 9 OJT tasks has been identified and is required for all explosives handlers before they may work independently. The 9 core OJT tasks for explosives handlers are:

1. Handling of explosives
2. Transportation
3. Housekeeping in explosives work areas
4. Labeling
5. Storage operations
6. Waste management

7. Weight limits
8. Documentation
9. Processing and stability review dates

Template lesson plans for each of the 9 OJT tasks are presented in Appendix A. The lesson plan for each trainee is expected to be customized to reflect the current practices and specific requirements of the area where the trainee is to work. Beyond the 9 core OJT tasks, each handler may also need task-specific OJT for particular assignments. The objectives, prerequisites, and criteria for each task-specific OJT element should be described to a level of detail similar to that of the lesson plan templates for general OJT tasks. A blank lesson plan template is included in Appendix A for this purpose.

As defined by the LLNL Training Plan, OJT for explosives handlers is informal, i.e., there are no formal requirements for the definition of OJT or for the training or qualification of trainers. However, this document does specify the minimum requirements for explosives OJT.

3.0 Personnel Qualification

The qualification process described in this section is for documenting the training each candidate has received, along with the trainers' evaluations and the payroll or designated qualifying supervisor's review and approval of the candidate for the explosives related tasks specified in the individual's training plan. The concurrence of the Hazards Control explosives safety engineer is also documented.

3.1 Qualification of Explosives-Aware Personnel

A trainee is considered to have fulfilled the minimum institutional requirements for qualification as explosives-aware personnel when he or she has done all of the following:

- Completed "Explosives Safety Orientation" (i.e., HS2016 or HS2020).
- Received the briefing titled "Explosives Aware" from the cognizant Hazards Control explosives safety engineer.
- Demonstrated the proper attitude for working safely around explosives.

Other requirements or limitations may be included in the relevant FSP or OSP. Training shall be completed to the satisfaction of the trainee's trainers and payroll or designated qualifying supervisor, and shall have the concurrence of an Explosives Safety Engineer.

3.2 Qualification of Explosives Support Personnel

A trainee is considered to have fulfilled the minimum institutional requirements for qualification as explosives support personnel when he or she has done all of the following:

- Completed "Explosives Safety Orientation" (i.e., HS2016 or HS2020).
- Received the "Explosives Aware" briefing from the cognizant Hazards Control explosives safety engineer.
- Received, from the RI, a briefing on the specific explosives hazards of the area where he or she is to work.
- Completed any necessary task-specific OJT from the RI or the experimenter responsible for the explosives present.
- Demonstrated the proper attitude for working safely around explosives.

Training shall be completed to the satisfaction of his or her trainers and payroll or designated qualifying supervisor and shall have the concurrence of Hazards Control explosive safety engineers.

3.3 Qualification of Explosives Handlers

A trainee is considered to have fulfilled the minimum institutional requirements for qualification as an explosives handler when he or she has:

- Completed "Explosives Safety Orientation" (i.e., HS2016 or HS2020).
- Completed the 9 site-specific OJT training elements to the satisfaction of his or her trainers and payroll or designated qualifying supervisor.
- Demonstrated the proper attitude for working safely with and around explosives.
- Completed any required task-specific OJT.

3.4 Payroll Supervisor's Actions

When the payroll or designated qualifying supervisor is satisfied that the employee has met all the requirements of his or her training plan, demonstrated the proper attitude for working safely with and around explosives, and can perform his or her job with explosives without the direct supervision of a qualified person, both the payroll supervisor and the designated qualifying supervisor (if applicable) sign the Explosives Training Qualification Record (form RL-2999-9, provided in Appendix B), which records OJT, appropriate training courses, and other training experience that qualifies the employee. The payroll or designated qualifying supervisor is responsible for

obtaining the Hazards Control explosive safety engineers' concurrence and any additional management approvals required by his or her organization. The payroll or designated qualifying supervisor shall see that copies of the signed Explosives Training Qualification Record are distributed as listed on the form.

3.5 Concurrence by the Hazards Control Department

A Hazards Control explosives safety engineer shall meet with each explosives trainee to discuss hazards and safety requirements associated with his or her job and sign the form to indicate concurrence after any issues have been resolved. Concurrence of the Hazards Control Department with the qualification record in no way minimizes the safety responsibilities of the employee, supervisors, payroll organization, or Authorizing Organization.

3.6 Annual Qualification Review

The payroll or designated qualifying supervisor shall make an annual review of each person's qualifications and work assignment to ensure that the person is still capable of performing the operations indicated on the Explosives Training Qualification Record. In addition, changes in the employee's job assignment, pertinent procedures, or other safety matters of concern to the payroll or designated qualifying supervisor or the employee are to be discussed. This review shall be recorded on an Explosives Personnel Annual Qualification Review Record (see Appendix C), which shall be distributed as required and retained with the employee's qualification record. Additional training completed during the year shall also be recorded on this form or on a new Explosives Training Qualification Record Form. A grace period of 90 days after qualification is due is allowed, and the person may continue to work as usual during that period. When that 90-day period has elapsed, however, the person's qualification is suspended until the review is accomplished.

3.7 Suspension of Qualification

The payroll or work supervisor shall not permit any employee to continue working with explosives if he or she is unable to perform his or her job safely (e.g., because of physical injury, disease, emotional stress, or a period of inactivity in his work with explosives). When the employee is able to return to work with explosives, the payroll or designated qualifying supervisor shall review the employee's condition and explosive safety training qualifications, and shall document the review. A new Explosives Training Qualification Record Form shall be prepared, and the employee's training shall be reviewed, to ensure that the employee is still knowledgeable in his or her assigned task. Refresher training shall be completed as necessary.

3.8 Age Restrictions

No person under 18 years of age shall be permitted to use or handle explosives or engage in any activity relating to blasting operations. See Document 17.1, "Explosives," in the *ES&H Manual* for additional information. No person between 18 and 21 years of age shall be permitted in any explosives magazine or be permitted to use or handle explosives, except under the direct supervision of a qualified explosives handler. No person under 21 years of age shall transport explosives.

3.9 Implementation

A revised and updated Explosives Training Qualification Record Form shall be prepared for all persons covered by this document at the time of his or her first annual review after publication of this document to show that all training requirements have been met.

4.0 Responsibilities

4.1 Explosives-Aware Personnel

Explosives-aware personnel are responsible for:

- Completing the training plan as defined by their payroll or designated qualifying supervisor, including all required courses.
- Receiving the "Explosives Aware" briefing from a Hazards Control explosive safety engineer.
- Developing and maintaining the proper awareness and attitude towards explosive safety.
- Completing required ongoing training following qualification as explosives-aware personnel.
- Informing their payroll or work supervisor of any physical or mental condition that could affect their ability to work safely around explosives.

4.2 Explosives Support Personnel

Explosives support personnel are responsible for:

- Completing the training plan as defined by their payroll or designated qualifying supervisor, including all required courses.

- Receiving the "Explosives Aware" briefing from a Hazards Control explosive safety engineer.
- Receiving a briefing from the RI or experimenter responsible for the explosives present about the hazards in the area where they are to work.
- Completing OJT as defined in the training plan.
- Developing and maintaining the proper awareness and attitude towards explosive safety.
- Completing required ongoing training following qualification as explosives support personnel.
- Informing their payroll or work supervisor of any physical or mental condition that could affect their ability to work safely around explosives.

4.3 Explosives Handlers

Explosives handlers are responsible for:

- Completing the training plan as defined by their payroll or designated qualifying supervisor, including all required courses.
- Completing OJT as defined in their training plan.
- Developing and maintaining the proper awareness and attitude towards explosive safety.
- Completing required ongoing training after qualification as an explosive handler.
- Informing their payroll or designated qualifying supervisor of any physical or mental condition that could affect their ability to work safely around explosives.

4.4 Payroll Supervisors

Qualification of explosives-aware personnel, explosives support personnel, or explosives handlers is the responsibility of the person's immediate payroll (i.e., administrative) supervisor. The payroll supervisor is responsible for:

- Developing a training plan for each employee whom he or she assigns to a job working with explosives.
- Making provisions for OJT for the worker (when required).
 - Designate personnel as OJT trainers.

- Verifying, after the OJT is completed, that the employee has been properly and fully instructed and has acquired the knowledge and safety practices necessary to perform the job safely.
- Ensuring that the individual has the proper attitude toward explosives safety, including recognition of
 - The inherent hazards involved in explosives work.
 - The importance of adhering to the letter and spirit of the rules that govern the handling of explosives.
- Ensuring that the employee can perform required emergency procedures.
- Informing the Health Services Department when a specific person has been assigned to a task working with explosives. The Health Services Department shall be informed of the frequency of exposure so that the employee can be assigned to the correct medical surveillance group.
- Updating worker training, training plans, and training and qualification records as required.
- Continuously reviewing the employee's fitness to remain qualified for work with or around explosives.
- Documenting such reviews at least annually.
- Suspending the qualifications of any employee as specified in Section 3.7.

Payroll supervisors of explosives handlers need to understand the safety implications of working with explosives and therefore shall complete "Explosives Safety Orientation" (i.e., HS2016 or HS2020 when available) with the same frequency as handlers. This training is recommended also for the payroll supervisors of explosives support personnel. It is also recommended that payroll supervisors attend the Department of Energy (DOE) Explosives Safety Training Course For Supervisors (XA1789).

As an alternative, the payroll supervisor may delegate the qualification role to an individual (i.e., the qualifying supervisor; see Section 4.5) who has completed "Explosives Safety Orientation" and who is familiar with the work that the employee is to do and with the training required to perform the work safely. In this case, both the payroll and the designated qualifying supervisor shall sign the qualification record to indicate their familiarity with its contents and the delegation of the qualification role.

4.5 Qualifying Supervisors

The qualifying supervisor is an individual who:

- The payroll supervisor has delegated the responsibility of qualification of explosives-aware personnel, explosives support personnel, or explosives handlers.
- Has attended "Explosives Safety Orientation" (i.e., HS2016 or HS2020 when available).
- Is familiar with the work the employee is to do and the training required to perform the work safely.

When the qualifying supervisor assumes responsibility for qualifying individuals to work with or around explosives, he or she assumes the supervisor training responsibilities specified in Section 4.4.

4.6 Hazards Control Department

The Hazards Control Department, through its explosive safety engineers, is responsible for:

- Providing formal classroom training for explosives safety.
- Reviewing and concurring with the training plan and qualification of explosives-aware personnel, explosives support personnel, and explosives handlers.

5.0 Work Smart Standards

DOE M 440.1-1, *DOE Explosives Safety Manual*.

Appendix A

Core Training OJT Templates

The lesson plan templates in this appendix are designed to give all explosives handlers the same core of skills and information, customized for the area in which each handler works. Because the specifics of documentation, transportation, and other factors vary from one work location to another, each organization is expected to use these template lesson plans as a basis for imparting the specific information required. **The training points and evaluation points marked with asterisks are mandatory.** Other training points, indicated with the delta symbol (Δ), may be added or subtracted to suit individual requirements.

A blank template is also included as an aid in preparing task-specific OJT lessons and in documenting such training. (Use of the template is not mandatory.)

Trainee Name: _____

Start Date: _____

OJT Task 1: Handling of Explosives

1. Objective

The trainee is able to demonstrate the proper techniques for general handling of explosives.

2. Description

Training focuses on the sources of energy input (e.g., heat, friction, electrical energy, or impact) that can cause explosives to react violently. Key concepts include (1) respect for explosives, not fear of them; (2) minimization of explosives inventory during work; (3) types of stimuli that can lead to unintentional initiation and how to avoid such stimuli; and (4) possible consequences of bare skin contact with explosives. The trainer demonstrates the proper techniques for handling explosives to prevent input of unwanted energy, and the trainee practices these techniques under the instructor's supervision until the objective is met.

3. Prerequisites

This training may be conducted concurrently with instruction in other OJT tasks but should be one of the first tasks begun.

- * In Sections 4 and 5, asterisked items are mandatory for all handlers.
- Δ Other training points, indicated with the delta symbol (Δ), may be added or removed as appropriate to the trainee's assignment.

4. Training Points

- * Emphasize working in a deliberate and unhurried manner.
- * Discuss the types of stimuli that can lead to unintentional initiation and how to avoid or minimize such stimuli. Emphasize avoidance of pinch points, dropping, and other potential hazards.
- * Prepare work areas for operations with explosives.
- * Open packages and weigh or measure various types of explosives (e.g., molding powders and pressed parts).
- * Work through entire operations to see the flow of work and all of the steps involved in an activity, from planning through cleanup and waste disposal.
- Δ Discuss electrical issues.

- Δ Practice methods of carrying and moving explosives within the general work area.
- Δ Discuss the use of padding and other material to minimize impact if explosives are dropped.
- Δ Discuss Large Charge requirements.
- Δ Practice the use of applicable powered and non-powered handling equipment. Emphasize the pre-use inspection of handling equipment and fixtures.

5. Evaluation Points

- * Demonstrate proper handling and movement procedures for various explosives and containers.
- * Demonstrate proper procedures for weighing and measuring various explosives.
- * Demonstrate ability to plan, organize, and perform an explosives operation while minimizing the handling risks.
- Δ Demonstrate an understanding of any electrical issues for the operation to be performed.
- Δ Demonstrate proper use of handling equipment.

6. Training Record

Date	Trainer	Description

Payroll Supervisor's Verification of Training

Trainee Name: _____

Start Date: _____

OJT Task 2: Explosives Packaging and Movement

1. Objective

The trainee is able to demonstrate the proper techniques for packaging and moving explosives.

2. Description

Training focuses on the proper packaging, labeling, documentation, inventory control, and transport of explosives within a specific facility. Emphasis is placed on procedures for (1) movement from one workroom to another within the facility and (2) packaging materials for long-term and short-term storage, movement, or transport. The trainer demonstrates the proper techniques for packaging and moving explosives, and the trainee practices these techniques under the instructor's supervision until the objective is met.

3. Prerequisites

This training may be conducted concurrently with instruction in other OJT tasks.

- * In Sections 4 and 5, only asterisked items are mandatory for all handlers.
- Δ Other training points, indicated with the delta symbol (Δ), may be added or removed as appropriate to the trainee's assignment.

4. Training Points

- * Point out routes for moving explosives to and from storage areas and between work areas.
- * Stress restrictions on quantities of explosives that can be moved in various areas, such as when carts, lifting aids, or a second operator are required.
- * Demonstrate proper methods for securing explosives or explosives articles during movement.
- Δ Additional classes may be required to qualify the trainee for related activities (e.g., vehicle operation, cranes, and hoists).
- * Demonstrate proper use of CMID tags (and Part Movement tags, if applicable).
- * Inventory management, including inventory control methods.

5. Evaluation Points

- * Demonstrate ability to properly package and prepare explosives for movement within the facility and for transportation outside the facility.
- * Demonstrate ability to properly move explosives within the facility.
- * Demonstrate ability to fill out CMID tag properly (and Part Movement tag, if applicable).

6. Training Record

Date	Trainer	Description

Payroll Supervisor's Verification of Training

Trainee Name: _____

Start Date: _____

OJT Task 3: Housekeeping in Explosives Work Areas

1. Objective

The trainee is able to demonstrate safe explosive housekeeping practices.

2. Description

Training focuses on general explosives handling within each assigned operating area. Key concepts include (1) having safe and unobstructed access to an exit; (2) having an uncluttered work area; (3) cleanup of explosives residue and waste following operations and at end of shift; (4) limiting flammables and combustibles in and around explosives areas; and (5) minimizing explosives inventory in the work area. The trainer demonstrates the proper techniques for explosive housekeeping, and the trainee practices these techniques under the instructor's supervision until the objective is met.

3. Prerequisites

This training may be conducted concurrently with instruction in other OJT tasks.

- * In Sections 4 and 5, only asterisked items are mandatory for all handlers.
- Δ Other training points, indicated with the delta symbol (Δ), may be added or removed as appropriate to the trainee's assignment.

4. Training Points

- * Emphasize good housekeeping within the assigned explosives workspace.
- * Stress identification of explosives and limiting the amount of explosives in the work area to the minimum amount required for the task.
- * Identify locations in the work area where explosives can collect.
- Δ Identify where explosives can collect in and on operating equipment.
- Δ Demonstrate procedures for cleaning operating equipment.
- * Demonstrate safe cleanup practices.
- * Emphasize the inventory control methods used in the work area and practice the use of those methods.
- Δ Emphasize procedures used to prevent accumulation of explosives in moving parts of operating equipment.

5. Evaluation Points

- * Demonstrate good housekeeping during daily operations.
- * Demonstrate cleanliness of the work area at the end of daily operations.
- * Identify where explosives can be expected to collect in the work area.
- * Demonstrate the proper cleaning of explosives collection points in work area.
- Δ Identify where explosives can be expected to collect in and on operating equipment.
- Δ Demonstrate the proper cleaning of operating equipment.

6. Training Record

Date	Trainer	Description

Payroll Supervisor's Verification of Training

Trainee Name: _____

Start Date: _____

OJT Task 4: Labeling of Explosives Containers

1. Objective

The trainee is able to demonstrate proper labeling of explosives and explosives containers for use, storage, or transport.

2. Description

Training focuses on the proper way to identify explosives containers with labels. The trainee learns to complete these labels accurately and learns where to find the information necessary to do so. The trainer demonstrates the proper techniques for labeling explosives, and the trainee practices these techniques under the instructor's supervision until the objective is met.

3. Prerequisites

This training may be conducted concurrently with instruction in other OJT tasks.

- * In Sections 4 and 5, only asterisked items are mandatory for all handlers.
- Δ Other training points, indicated with the delta symbol (Δ), may be added or removed as appropriate to the trainee's assignment.

4. Training Points

- * Review the standard LLNL Explosives ID Label.
- * Explain what each entry on the label means and why the entry needs to be completed.
- * Show the trainee where to find the information needed to complete labels accurately.

5. Evaluation Points

- * Demonstrate the ability to properly complete LLNL Explosives ID labels for various explosives and explosives containers.

6. Training Record

Date	Trainer	Description

Payroll Supervisor's Verification of Training

Trainee Name: _____

Start Date: _____

OJT Task 5: Explosives Storage

1. Objective

The trainee is able to demonstrate competence in identifying, segregating, and storing explosives.

2. Description

Training focuses on proper identification of explosives, compatibility groupings of stored explosives, and storage of explosives. The trainer demonstrates the proper techniques for storing explosives, and the trainee practices these techniques under the instructor's supervision until the objective is met.

3. Prerequisites

This training may be conducted concurrently with instruction in other OJT tasks.

- * In Sections 4 and 5, only asterisked items are mandatory for all handlers.
- Δ Other training points, indicated with the delta symbol (Δ), may be added or removed as appropriate to the trainee's assignment.

4. Training Points

- * Emphasize identification, storage labeling, container requirements, storage compatibility groupings, storage limits, inventory, segregation, stacking and height limits, and housekeeping.
- * Emphasize authorized operations in storage magazines and related controls.
- * Provide instruction on all work areas and point out inventory control aids, such as whiteboards.
- * Show the storage areas and inventory control methods for energetic materials and the limits on length of storage.
- * Review record keeping and stability issues.
- Δ Emphasize the time limits for storage in service magazines.
- Δ Emphasize fire prevention requirements.
- Δ Emphasize electrical requirements for storage areas.

5. Evaluation Points

- * Demonstrate ability to properly determine the compatibility groups of various explosives and explosives articles.
- Δ Demonstrate the proper storage of various explosives and explosives articles in a magazine.
- Δ Demonstrate the proper placement of explosives within a magazine.
- Δ Demonstrate an understanding of difference between a "storage magazine" and a "service magazine."
- Δ Demonstrate an understanding of fire prevention requirements.
- Δ Demonstrate an understanding of the electrical requirements for magazines.

6. Training Record

Date	Trainer	Description

Payroll Supervisor's Verification of Training

Trainee Name: _____

Start Date: _____

OJT Task 6: Explosives Waste Management

1. Objective

The trainee is able to demonstrate competence in collecting, labeling, and managing explosive wastes.

2. Description

Training focuses on practices of explosives waste management. The trainer demonstrates the proper techniques for collecting, labeling, and managing explosives wastes, and the trainee practices these techniques under the instructor's supervision until the objective is met.

3. Prerequisites

This training may be conducted concurrently with instruction in other OJT tasks.

- * In Sections 4 and 5, only asterisked items are mandatory for all handlers.
- Δ Other training points, indicated with the delta symbol (Δ), may be added or removed as appropriate to the trainee's assignment.

4. Training Points

- * Demonstrate proper techniques for collecting, labeling, and managing explosives wastes.
- * Review various forms (1–4), quantities, and types of explosives wastes.
- * Review with trainee the relevant documentation, e.g., waste labels, waste requisitions, procedures for management of unreacted explosives waste, and FSP sections.
- * Emphasize documentation requirements and labeling.
- * Review site and job-specific waste types and quantities.
- Δ Explain the United Nations Organization (UNO) classification and assignment of compatibility group for explosives waste.
- Δ Emphasize that the UNO classification may change when uncontainerized explosives waste is containerized.

5. Evaluation Points

- * Demonstrate the ability to properly identify and classify various types of explosives waste.
- * Demonstrate the ability to properly label various types of explosives waste.
- * Demonstrate an understanding of the four types of explosives waste and the hazards associated with each.

6. Training Record

Date	Trainer	Description

Payroll Supervisor's Verification of Training

Trainee Name: _____

Start Date: _____

OJT Task 7: Weight Limits & Inventory Management

1. Objective

The trainee knows how much explosive may be present in each of his or her work locations and where to locate more information on the subject.

2. Description

Training focuses on weight limits in general and on local building, room, and area limits in depth. Key concepts include (1) requirements of the FSP and any pertinent OSPs pertaining to the trainee's site and work activities and (2) the "Cardinal Rule" of explosives safety—minimizing quantity, time of exposure, and number of personnel exposed to explosive hazards.

3. Prerequisites

This training may be conducted concurrently with instruction in other OJT tasks.

- * In Sections 4 and 5, only asterisked items are mandatory for all handlers.
- Δ Other training points, indicated with the delta symbol (Δ), may be added or removed as appropriate to the trainee's assignment.

4. Training Points

- * Emphasize the requirements of the FSP and any OSPs pertaining to the site and work activities.
- * Emphasize the building and room limits of the area in which the trainee will work and the aids used to maintain an inventory of the net explosives weight of the explosives present (such as white boards).
- * Emphasize the application of the Cardinal Rule to all areas and operations.
- Δ Review with the trainee Chapter VI, "Quantity-Distance and Level-of-Protection Criteria for Explosives Activities," in the *DOE Explosives Safety Manual*. Explain how the criteria affect weight limits. Ensure that the trainee has access to the documents for future reference.
- Δ Review with trainee the location of Quantity-Distance references in the *DOE Explosives Safety Manual* and in Department of Defense (DoD) 6055.9 STD, Chapters 2, 5 and 9. Discuss how the references affect weight limits. Ensure that the trainee has access to the documents for future reference.
- Δ Emphasize the significance of required separation distances from walls.

5. Evaluation Points

- * Demonstrate the maintenance and accuracy of a running inventory for work area.
- * Demonstrate application of the Cardinal Rule to all areas and operations.
- * Demonstrate proper placement of explosives within an area to ensure compliance with established weight limits.
- Δ Demonstrate an understanding of the relationship of area weight limits to building weight limits.
- Δ Demonstrate an understanding of the difference and relationship between "Net Explosives Weight" (NEW) and "TNT equivalent weight" and which is used to determine area weight limits.

6. Training Record

Date	Trainer	Description

Payroll Supervisor's Verification of Training

Trainee Name: _____

Start Date: _____

OJT Task 8: Documentation

1. Objective

The trainee is able to demonstrate competence in locating, understanding, and completing safety documentation.

2. Description

Training focuses on review of the following documents dealing with explosives: (1) the *Environment, Safety, and Health (ES&H) Manual*; (2) the applicable FSPs and OSPs; (3) the *DOE Explosives Safety Manual*; and (4) other safety documentation pertaining to energetic materials. The instructor tailors the list of information sources to the area in which the trainee is to work. The trainer explains the documents and demonstrates procedures for completing paperwork. The trainee practices locating, understanding, and completing safety documents under the instructor's supervision until the objective is met.

3. Prerequisites

This training may be conducted concurrently with instruction in other OJT tasks.

- * In Sections 4 and 5, only asterisked items are mandatory for all handlers.
- Δ Other training points, indicated with the delta symbol (Δ), may be added or removed as appropriate to the trainee's assignment.

4. Training Points

- * Review with trainee the *ES&H Manual*, applicable FSPs and OSPs, LLNL Explosives Handbook, and other relevant documents (on the web and/or hard copy).
- * Emphasize Integration Work Sheets (IWSs), Peer Reviews, and other documents that are used in experiment planning and authorization, storage, transport, and other tasks.
- * Give the trainee a list of questions and direct him or her to find the answers in the above documents.

Examples of questions include the following:

1. Weight limit and personnel limit for a given work area.
2. Processing and stability review dates for a specific lot of material.
3. Ingredients of a specific RX or LX material.
4. Small-scale safety information on a specific material.
5. Electrical requirements applicable to an operation.

6. Limitations for machining explosives.
7. General heating controls.
8. Use of lasers with explosives.

Δ Review with the trainee other types of documentation related to explosives experimentation, e.g., Peer Review Form, Explosives Safety Data Form, and processing sheets.

5. Evaluation Points

- * Demonstrate the ability to find designated information in the *ES&H Manual*.
- * Demonstrate the ability to find designated information in the *DOE Explosives Safety Manual*.
- * Demonstrate the ability to find designated information in the applicable FSP.
- * Demonstrate ability to fill out applicable documentation, e.g., Peer Review Form and processing log sheets.
- * Demonstrate the ability to find designated information in the *LLNL Explosives Handbook*.

6. Training Record

Date	Trainer	Description

Payroll Supervisor's Verification of Training

Trainee Name: _____

Start Date: _____

OJT Task 9: Processing and Stability Review Dates

1. Objective

The trainee is able to explain the significance of the Stability and Processing Review Program and demonstrate the procedure for obtaining the information needed to fill out and submit the Explosives Safety Data Form.

2. Description

The trainer explains the Stability and Processing Review Program and demonstrates the procedure for submitting the Explosives Safety Data Form. Training focuses on the stability and processing review system used at LLNL to track the suitability of materials for use or storage. Key concepts include (1) the meaning and importance of the review dates and (2) the trainee's responsibility as owner of energetic materials or as magazine custodian. The trainee explains the system and practices the procedures under the instructor's supervision until the objective is met.

3. Prerequisites

This training may be conducted concurrently with instruction in other OJT tasks.

- * In Sections 4 and 5, only asterisked items are mandatory for all handlers.
- Δ Other training points, indicated with the delta symbol (Δ), may be added or removed as appropriate to the trainee's assignment.

4. Training Points

- * Review the following training materials:
 - ES&H Manual* Document 17.2, "LLNL Energetic Materials Stability Review Program."
 - ES&H Manual* Document 17.6, "LLNL Energetic Materials Processing Review Program."
 - Explosives Safety Data Form.
 - File of completed Explosives Safety Data Forms.
- * Explain how to obtain Explosives Safety Data Forms and information.
- * Explain what the stability review date and processing review date mean, why the dates are important, and how the dates are determined.
- * Explain which materials require a current stability review date at all times.

- * Explain when it is necessary for materials to have a current processing review date.
- Δ Demonstrate the procedure for submitting the Explosives Safety Data Form.
- Δ Stress that the owner of explosives is responsible for obtaining the necessary tests and reviews (e.g., stability review dates and periodic stabilizer testing).
- Δ Explain what reviews are required for the Explosives Safety Data Form.

5. Evaluation Points

- * Demonstrate understanding of difference between the "stability review date" and the "processing review date."
- * Demonstrate the ability to determine the stability review date for various explosives, lots, and explosives components.
- * Demonstrate the ability to determine the processing review date for various explosives and explosives components.
- * Demonstrate the ability to properly complete the Explosives Safety Data Form.

6. Training Record

Date	Trainer	Description

Payroll Supervisor's Verification of Training

**Template for Task Specific OJT Lesson Plan
Title**

1. Objective

2. Description

3. Prerequisites

4. Training Activities

5. Training Record

Appendix B

Explosives Training Qualification Record

The form in this appendix is used to record the job description, training plan, and training activities for each explosives-aware person, explosives support person, or explosives handler. Additional signature lines or distribution boxes may be added by each organization to meet its own needs. The signature lines and distribution boxes on the form represent the institutional minimum requirements.

The following instructions are given as an aid to use in completing the form.

Job Title: Enter the assigned job title and include the job class description, if relevant.

Explosives Job Description: List the facilities in which the individual is authorized to perform explosives tasks. Identify the tasks that the individual is authorized to perform. Identify specialized equipment the individual is qualified to use (e.g., mixers and presses). Identify any limitations to the person's qualification (e.g., quantity or type of material).

Job-specific OJT Tasks: List any job-specific training that the individual shall complete (e.g., operating specific pieces of equipment or learning specific tasks).

Several partially completed forms (one for each of the three categories of personnel) are included as references.

**LAWRENCE LIVERMORE NATIONAL LABORATORY
EXPLOSIVES TRAINING QUALIFICATION RECORD**

Name:	Employee No:			
Job Title:	Ext:			
Payroll Organization:	Matrix Organization:			
Category: <input type="checkbox"/> Explosives Aware <input type="checkbox"/> Explosives Support <input type="checkbox"/> Explosives Handler				
EXPLOSIVES JOB DESCRIPTION:				
TRAINING PLAN				
TRAINING	INSTRUCTOR	FROM	TO	COMPLETED (Instructor to initial and date)
HS2016 Explosives Safety Orientation				
Area-specific OJT Tasks: 1 Handling of Explosives 2 Transportation 3 Housekeeping in Explosives Work Areas 4 Labeling 5 Storage Operations 6 Waste management 7 Weight Limits 8 Documentation 9 Processing & Stability Review Dates				
Job-specific OJT Tasks:				

TRAINING PLAN REVIEW			
Employee _____	Date _____	Payroll Supervisor _____	Date _____
<div style="text-align: right; margin-right: 100px;"><i>* Qualifying Supervisor</i></div> _____			
Concurrence by:			
HC Explosives Safety _____	Date _____	Mgt. Approval (if required) _____	Date _____

EXPLOSIVES-AWARE PERSONNEL			
Employee _____	Date _____		
The above-named employee has completed the required training and is now qualified as Explosives Aware Personnel.			
		Payroll Supervisor _____	Date _____
<div style="text-align: right; margin-right: 100px;"><i>* Qualifying Supervisor</i></div> _____			
Concurrence by:			
HC Explosives Safety _____	Date _____	Mgt. Approval (if required) _____	Date _____

EXPLOSIVES SUPPORT PERSONNEL			
Employee _____	Date _____		
The above-named employee has completed the required training and is now qualified as Explosives Support Personnel.			
		Payroll Supervisor _____	Date _____
<div style="text-align: right; margin-right: 100px;"><i>* Qualifying Supervisor</i></div> _____			
Concurrence by:			
HC Explosives Safety _____	Date _____	Mgt. Approval (if required) _____	Date _____

EXPLOSIVES HANDLER			
Employee _____		Date _____	
The above-named employee has completed the required classes and area-specific OJT tasks and is now qualified as an Explosives Handler for general tasks. Job-specific OJT is not yet complete.			
		Payroll Supervisor _____	
		Date _____	
Concurrence by: _____		* <i>Qualifying Supervisor</i> _____	
HC Explosives Safety _____		Mgt. Approval (if required) _____	
Date _____		Date _____	

COMPLETION OF TASK-SPECIFIC TRAINING			
Employee _____		Date _____	
The above-named employee has completed the above-described training and has met both local area and task specific OJT requirements. I consider him/her to be fully qualified for the explosives handling job specified at the top of the form.			
		Payroll Supervisor _____	
		Date _____	
Concurrence by: _____		* <i>Qualifying Supervisor</i> _____	
HC Explosives Safety _____		Mgt. Approval (if required) _____	
Date _____		Date _____	

* The signature of the Qualifying Supervisor is required if the qualification responsibility is delegated. In all other cases, write "NA" on that signature line.

DISTRIBUTION: Explosives Safety Engineer, Payroll Supervisor, Employee, Training File

RL29999-9

**LAWRENCE LIVERMORE NATIONAL LABORATORY
EXPLOSIVES TRAINING QUALIFICATION RECORD**

Example for Explosives-Aware Personnel

Name: John Doe	Employee No: 123456												
Job Title: Building Coordinator	Ext: xxxxx												
Payroll Organization: xxxx	Matrix Organization: xxxx												
Category: <input checked="" type="checkbox"/> Explosives Aware <input type="checkbox"/> Explosives Support <input type="checkbox"/> Explosives Handler													
EXPLOSIVES JOB DESCRIPTION: John is the building coordinator for a facility where explosives work is done. In the course of his work, he needs unescorted access to rooms containing explosives for purposes of inspection and in case of emergencies, such as water leaks.													
TRAINING PLAN													
TRAINING	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 35%;">INSTRUCTOR</th> <th style="width: 15%;">FROM</th> <th style="width: 15%;">TO</th> <th style="width: 35%;">COMPLETED (Instructor to initial and date)</th> </tr> <tr> <td>HS2016 Explosives Safety Orientation</td> <td>D. Hill</td> <td></td> <td></td> </tr> <tr> <td>Explosives Aware Briefing</td> <td>CV Vick</td> <td></td> <td></td> </tr> </table>	INSTRUCTOR	FROM	TO	COMPLETED (Instructor to initial and date)	HS2016 Explosives Safety Orientation	D. Hill			Explosives Aware Briefing	CV Vick		
INSTRUCTOR	FROM	TO	COMPLETED (Instructor to initial and date)										
HS2016 Explosives Safety Orientation	D. Hill												
Explosives Aware Briefing	CV Vick												

TRAINING PLAN REVIEW			
<u>John Doe</u>	<u>2/2/02</u>	<u>Jack Roe</u>	<u>2/2/02</u>
Employee	Date	Payroll Supervisor	Date
* Qualifying Supervisor _____			
Concurrence by:			
<u>CV Vick</u>	<u>2/4/02</u>	<u>N/A</u>	
HC Explosives Safety	Date	Mgt. Approval (if required)	Date

EXPLOSIVES-AWARE PERSONNEL	
<u>John Doe</u>	<u>3/3/02</u>
Employee	Date
<p>The above-named employee has completed the required training and is now qualified as Explosives-Aware Personnel.</p>	
<u>Jack Roe</u>	<u>3/3/02</u>
Payroll Supervisor	Date
<p style="text-align: center;">* <i>Qualifying Supervisor</i> _____</p>	
<p>Concurrence by:</p>	
<u>C.V. Vick</u>	_____
HC Explosives Safety	Mgt. Approval (if required)
Date	Date

EXPLOSIVES SUPPORT PERSONNEL			
Employee _____	Date _____	The above-named employee has completed the required training and is now qualified as Explosives Support Personnel.	
		Payroll Supervisor _____	Date _____
Concurrence by: _____		* <i>Qualifying Supervisor</i> _____	
HC Explosives Safety _____	Date _____	Mgt. Approval (if required) _____	Date _____

EXPLOSIVES HANDLER	
Employee _____	Date _____
<p>The above-named employee has completed the required classes and area-specific OJT tasks and is now qualified as an Explosives Handler for general tasks. Job-specific OJT is not yet complete.</p>	
Concurrence by: _____	Payroll Supervisor _____ Date _____ <i>*Qualifying Supervisor</i> _____
HC Explosives Safety _____	Mgt. Approval (if required) _____ Date _____

COMPLETION OF TRAINING			
Employee _____	Date _____	<p>The above-named employee has completed the above-described training and has met both local area and specific OJT requirements. I consider him/her to be fully qualified for the explosives handling job specified at the top of the form.</p>	
<p>Payroll Supervisor _____</p> <p style="text-align: right;">Date _____</p>		<p>Concurrence by: _____</p> <p style="text-align: right;">* <i>Qualifying Supervisor</i> _____</p>	
HC Explosives Safety _____	Date _____	Mgt. Approval (if required) _____	Date _____

* The signature of the Qualifying Supervisor is required if the qualification responsibility is delegated. In all other cases, write "NA" on that signature line.

DISTRIBUTION: Explosives Safety Engineer, Payroll Supervisor, Employee, Training File

**LAWRENCE LIVERMORE NATIONAL LABORATORY
EXPLOSIVES TRAINING QUALIFICATION RECORD**

Example for Explosives Support Personnel

Name: Jane Roe	Employee No: xxxxxx			
Job Title: Electronics Technician	Ext: xxxxx			
Payroll Organization: xxxx	Matrix Organization: xxxx			
Category: <input type="checkbox"/> Explosives Aware <input checked="" type="checkbox"/> Explosives Support <input type="checkbox"/> Explosives Handler				
EXPLOSIVES JOB DESCRIPTION: Jane will be attaching connectors to closed STEX assemblies containing live explosives and making connections between the explosives assemblies and various pieces of equipment.				
TRAINING PLAN				
TRAINING	INSTRUCTOR	FROM	TO	COMPLETED (Instructor to initial and date)
HS2016 Explosives Safety Orientation	D. Hill			
Explosives Aware Briefing	D. Hill			
Briefing on hazards of STEX task	J. Wardell			
Job-specific OJT Tasks:				
Connecting leads to STEX apparatus	J. Wardell			
Connecting equipment to live explosives assemblies	J. Wardell			
TRAINING PLAN REVIEW				
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <i>Jane Roe</i> _____ Employee Date </div> <div style="width: 45%;"> <i>Fred Jones</i> _____ Payroll Supervisor Date </div> </div> <div style="text-align: center; margin-top: 10px;"> <i>* Qualifying Supervisor</i> _____ </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> Concurrence by: <i>D. Hill</i> _____ HC Explosives Safety Date </div> <div style="width: 45%;"> <i>Joe Doakes</i> _____ Mgt. Approval (if required) Date </div> </div>				

EXPLOSIVES-AWARE PERSONNEL (OPTIONAL)

Employee Date

The employee has completed the required training and is now qualified as Explosives-Aware Personnel.

Payroll Supervisor Date

* *Qualifying Supervisor*

Concurrence by:

HC Explosives Safety Date

Mgt. Approval (if required) Date

EXPLOSIVES SUPPORT PERSONNEL

Employee Date

The above-named employee has completed the required training and is now qualified as Explosives Support Personnel.

Payroll Supervisor Date

* *Qualifying Supervisor*

Concurrence by:

HC Explosives Safety Date

Mgt. Approval (if required) Date

EXPLOSIVES HANDLER

Employee Date

The above-named employee has completed the required classes and Area-specific OJT tasks and is now qualified as an Explosives Handler for general tasks. Job-specific OJT is not yet complete.

Payroll Supervisor Date

* *Qualifying Supervisor*

Concurrence by:

HC Explosives Safety Date

Mgt. Approval (if required) Date

COMPLETION OF TASK-SPECIFIC TRAINING			
Employee _____	Date _____	<p>The above-named employee has completed the above-described training and has met both local area and task specific OJT requirements. I consider him/her to be fully qualified for the explosives handling job specified at the top of the form.</p>	
		Payroll Supervisor _____	Date _____
Concurrence by: _____		* <i>Qualifying Supervisor</i> _____	
HC Explosives Safety _____	Date _____	Mgt. Approval (if required) _____	Date _____

* The signature of the Qualifying Supervisor is required if the qualification responsibility is delegated. In all other cases, write "NA" on that signature line.

DISTRIBUTION: Explosives Safety Engineer, Payroll Supervisor, Employee, Training File

**LAWRENCE LIVERMORE NATIONAL LABORATORY
EXPLOSIVES TRAINING QUALIFICATION RECORD**

Example for Explosives Handler

Name: Ted Jones		Employee No: xxxxxx		
Job Title: Explosives Synthesis chemist		Ext: xxxxx		
Payroll Organization: xxxx		Matrix Organization: xxxx		
Category: <input type="checkbox"/> Explosives Aware <input type="checkbox"/> Explosives Support <input checked="" type="checkbox"/> Explosives Handler				
EXPLOSIVES JOB DESCRIPTION: Ted will be synthesizing explosives, both known materials and new compounds. His tasks will include wet chemical operations on various scales, up to 100 lbs per batch. He will also use various types of analytical instruments, such as FTIR, NMR, particle size analyzers, chromatographic equipment, and viscometers (no special training is required to use these instruments with explosives, beyond the usual training in handling explosives).				
TRAINING PLAN				
TRAINING	INSTRUCTOR	FROM	TO	COMPLETED (Instructor to initial and date)
HS2016 Explosives Safety Orientation	D. Hill			
Area-specific OJT Tasks: 1 Handling of Explosives 2 Transportation 3 Housekeeping in Explosives Work Areas 4 Labeling 5 Storage Operations 6 Waste management 7 Weight Limits 8 Documentation 9 Processing & Stability Review Dates				
Job-specific OJT Tasks:				
Synthetic operations with explosives	Phil Pagoria, Rob Schmidt, or Alex Mitchell			

TRAINING PLAN REVIEW			
Employee _____	Date _____	Payroll Supervisor _____	Date _____
<div style="text-align: center;">* <i>Qualifying Supervisor</i> _____</div>			
Concurrence by:			
HC Explosives Safety _____	Date _____	Mgt. Approval (if required) _____	Date _____

EXPLOSIVES-AWARE PERSONNEL (OPTIONAL)			
Employee _____	Date _____		
The above-named employee has completed the required training and is now qualified as Explosives Aware Personnel.			
		Payroll Supervisor _____	Date _____
<div style="text-align: center;">* <i>Qualifying Supervisor</i> _____</div>			
Concurrence by:			
HC Explosives Safety _____	Date _____	Mgt. Approval (if required) _____	Date _____

EXPLOSIVES SUPPORT PERSONNEL (OPTIONAL)			
Employee _____	Date _____		
The above-named employee has completed the required training and is now qualified as Explosives Support Personnel.			
		Payroll Supervisor _____	Date _____
<div style="text-align: center;">* <i>Qualifying Supervisor</i> _____</div>			
Concurrence by:			
HC Explosives Safety _____	Date _____	Mgt. Approval (if required) _____	Date _____

EXPLOSIVES HANDLER			
Employee _____		Date _____	
The above-named employee has completed the required classes and area-specific OJT tasks and is now qualified as an Explosives Handler for general tasks. Job-specific OJT is not yet complete.			
		Payroll Supervisor _____	
		Date _____	
Concurrence by:		* <i>Qualifying Supervisor</i> _____	
HC Explosives Safety _____		Mgt. Approval (if required) _____	
Date _____		Date _____	

COMPLETION OF TASK-SPECIFIC TRAINING (OPTIONAL)			
Employee _____		Date _____	
The above-named employee has completed the above-described training and has met both local area and task specific OJT requirements. I consider him/her to be fully qualified for the explosives handling job specified at the top of the form.			
		Payroll Supervisor _____	
		Date _____	
Concurrence by:		* <i>Qualifying Supervisor</i> _____	
HC Explosives Safety _____		Mgt. Approval (if required) _____	
Date _____		Date _____	

* The signature of the Qualifying Supervisor is required if the qualification responsibility is delegated. In all other cases, write "NA" on that signature line.

DISTRIBUTION: Explosives Safety Engineer, Payroll Supervisor, Employee, Training File

Appendix C

Explosives Personnel Annual Qualification Review Record

Name: _____	Payroll Supervisor: _____
Job Title/Specialty: _____	Qualifying Supervisor: _____
Job Category: _____	
Employee No.: _____	Original Training Qualification Date: _____
Organization: _____	Date of Last Review: _____

- A. I have discussed or reviewed the following subjects with this employee:
 Employee's Explosives Training Qualification Record. (If a copy is not available, contact the Hazards Control Explosives Safety Engineer for another.)
 Any physical injury or other condition that would prevent this employee from performing his/her explosives related job safely.
 Latest revision to the LLNL *ES&H Manual* and relevant documents dealing with conducting explosives operations.
 Latest revision to the appropriate sections of relevant FSPs.
 Any Operational Safety Plans or special operating procedures that are in effect and that pertain to the employee's work.
- B. Other safety matters discussed or of concern to this employee:

- C. Additional training and qualifications accomplished since the last review:

- D. Changes in duties:

- E. By signing below, the employee verifies that his/her payroll supervisor has provided an opportunity to discuss any explosives related job qualifications, safety matters, and concerns.

_____ Signature of Employee	_____ Date
--------------------------------	---------------

I consider this employee: ☐ Still qualified ☐ No longer qualified

Remarks: _____

_____ Signature of Payroll Supervisor	_____ Date	_____ Signature of Qualifying Supervisor (if applicable)
--	---------------	--

* The signature of the Qualifying Supervisor is required if the qualification responsibility is delegated. In all other cases, write "NA" on that signature line.

DISTRIBUTION: Explosives Safety Engineer, Payroll Supervisor, Employee, Training File